

IN THE CLAIMS:

1. (Currently Amended) For mitigating effects of hydrometeors presented at an instrument antenna system directly exposed to precipitation events, an apparatus comprising:

a mechanical mechanism acting adjacent to the system with sufficient force to cause movement of the hydrometeors relative to the system; and

a corrective model mechanism including characterization of radiation being emitted by and scattered from hydrometeors for further refining instrument performance in the presence of hydrometeors.

2. (Currently Amended) The apparatus of claim 1 wherein said mechanical mechanism ~~apparatus~~ includes a relatively high velocity blower-~~mechanism~~.

3. (Currently Amended) The apparatus of claim 1 wherein the system includes a an antenna window, said ~~apparatus including a~~ mechanical mechanism including means for inducing said movement of the hydrometeors either or both of before and after hydrometeor contact or formation at the window.

4. (Original) The apparatus of claim 3 wherein said apparatus further includes a hydrophobic material applied to the window.

5. (Currently Amended) The apparatus of claim 1 ~~4~~ wherein said mechanical mechanism includes means for causing vibration at the window.

Cancel claim 6.

7. (Currently Amended) The apparatus of claim 1 ~~6~~ wherein said model mechanism includes a retrieval method development stage, a retrieval method use stage, and a correction stage.

8. (Currently Amended) An apparatus for mitigating effects of hydrometeors presented at an instrument antenna window having both upper and lateral surfaces directly exposed to precipitation events, said apparatus comprising:

a relatively high velocity blower mechanism acting adjacent to the window with sufficient force to cause movement of the hydrometeors relative to the window either or both of before and after hydrometeor contact or formation at the window, said blower mechanism including a blower located adjacent to an air flow directing means for directing a relatively high velocity flow of air tangentially across both the upper and lateral surfaces of the window.

9. (Original) The apparatus of claim 8 further comprising a sensor for sensing the likelihood of

hydrometeor presence at the window, said sensor and said blower mechanism operatively associated so that operation of said blower mechanism begins when likely hydrometeor presence at the window is sensed by said sensor.

10. (Original) The apparatus of claim 9 wherein said blower mechanism includes means for directing air flow tangentially across a detecting surface of said sensor.

Cancel claim 11.

12. (Currently Amended) The apparatus of claim 8 ~~11~~ further comprising a housing configured for securement to the instrument adjacent to the window and defining a duct of said directing means having an air inlet and air outlet on opposite sides of said blower.

13. (Original) The apparatus of claim 12 wherein said air inlet is vertically disposed opening downwardly during normal instrument use.

14. (Currently Amended) The apparatus of claim 8 ~~11~~ wherein said air flow directing means includes an arcuate structure having a plurality of fins for promoting laminar air flow across the radome surfaces.

15. (Original) The apparatus of claim 8 wherein said blower mechanism includes a centrifugal fan.

16. (Original) The apparatus of claim 8 wherein said blower mechanism includes a blower and an air flow directing means for directing a relatively high velocity flow of air angularly away from a surface of the window.

17. (Original) The apparatus of claim 8 further comprising a vibration inducing mechanism one of attached or located adjacent to the window.

18. (Original) The apparatus of claim 8 further comprising a hydrophobic material applied to the window.

19. (Currently Amended) A method for mitigating effects of hydrometeors presented at an instrument antenna system directly exposed to precipitation events comprising the steps of:

sensing hydrometeor presence at the system
indicating a precipitation event; and

~~responsive thereto, employing at least one mechanism
for reliably refining instrument output during the
precipitation event.~~

modeling radiative transfer, including effects of
radiation being emitted by and scattered from
hydrometeors.

20. (Currently Amended) The method of claim 19 ~~18~~
further comprising removing precipitation at the antenna
system to thereby refine instrument output during the

precipitation event responsive to the sensing of hydrometeor presence at the system, wherein the step of removing precipitation ~~said mechanism~~ includes at least one of ~~a mechanism for the step of~~ inducing movement of the hydrometeors either or both of before hydrometeor contact at the antenna system and after hydrometeor contact or formation at the antenna system, and the step of a mechanism for causing vibration at a part of the system, ~~and a corrective model mechanism for refining instrument performance in the presence of hydrometeors.~~

21. (Currently Amended) The method of claim 19 ~~20~~ wherein the step of modeling radiative transfer ~~employment of said model mechanism~~ includes the steps of developing a retrieval method, using said retrieval method to convert observables to meteorological parameters, and estimating hydrometeor population from deviations noted thereby.

ADD THE FOLLOWING NEW CLAIMS:

22. (Newly Presented) The method of claim 21 further comprising the step of employing a corrective mechanism for refining instrument performance in the presence of hydrometeors based at least in part on estimated hydrometeor population.

23. (Newly Presented) The method of claim 20 wherein the antenna system includes a window having upper and lateral surfaces, and wherein the step of inducing movement of the hydrometeors includes the step of directing a relatively high velocity flow of air tangentially across both the upper and lateral surfaces of the window.